

$$\Sigma(2230) \ 3/2^+$$

$$I(J^P) = 1(\frac{3}{2}^+) \ \text{Status: } *$$

NODE=B184

OMITTED FROM SUMMARY TABLE

 $\Sigma(2230)$ POLE POSITION

NODE=B184225

REAL PART

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
2234±25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184RE
NODE=B184RE**-2×IMAGINARY PART**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
340±45	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184IM
NODE=B184IM **$\Sigma(2230)$ POLE RESIDUES**

NODE=B184250

Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}$

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.07±0.02	25 ± 15	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A00
NODE=B184A00**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Sigma\pi$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.03±0.02	180 ± 25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A01
NODE=B184A01**Normalized residue is $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda\pi$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.11±0.05	-16 ± 10	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A02
NODE=B184A02**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Xi K$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.04±0.02	155 ± 20	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A03
NODE=B184A03**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Lambda(1520)\pi, S\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.12±0.05	-80 ± 25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A04
NODE=B184A04**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Lambda(1520)\pi, D\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.03±0.02	160 ± 30	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A05
NODE=B184A05**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Sigma(1385)\pi, P\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.05±0.02	60 ± 25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A06
NODE=B184A06**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Sigma(1385)\pi, F\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.05±0.03	-70 ± 20	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A07
NODE=B184A07**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Delta\bar{K}, P\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.11±0.04	60 ± 15	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A08
NODE=B184A08**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Delta\bar{K}, F\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.07±0.03	90 ± 25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A09
NODE=B184A09**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}^*(892), S=1/2, P\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.08±0.04	40 ± 45	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A10
NODE=B184A10**Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}^*(892), S=3/2, P\text{-wave}$**

MODULUS	PHASE (°)	DOCUMENT ID	TECN	COMMENT
0.14±0.03	-40 ± 45	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A11
NODE=B184A11

Normalized residue in $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}^*(892)$, $S=3/2$, F -wave

<u>MODULUS</u>	<u>PHASE ($^\circ$)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.05±0.03	35 ± 30	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184A12
 NODE=B184A12

 $\Sigma(2230)$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2240±27	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184M

NODE=B184M

 $\Sigma(2230)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
345±50	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184W

NODE=B184W

 $\Sigma(2230)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $N\bar{K}$	(6.0±2.0) %
Γ_2 $\Sigma\pi$	(2.0±1.0) %
Γ_3 $\Lambda\pi$	(12 ±6) %
Γ_4 ΞK	(2.0±1.0) %
Γ_5 $\Lambda(1520)\pi$, S -wave	(14 ±5) %
Γ_6 $\Lambda(1520)\pi$, D -wave	
Γ_7 $\Sigma(1385)\pi$, P -wave	(4 ±4) %
Γ_8 $\Sigma(1385)\pi$, F -wave	(3.0±2.0) %
Γ_9 $\Delta\bar{K}$, P -wave	(14 ±5) %
Γ_{10} $\Delta\bar{K}$, F -wave	(8.0±2.0) %
Γ_{11} $N\bar{K}^*(892)$, $S=1/2$, F -wave	(8.0±3.0) %
Γ_{12} $N\bar{K}^*(892)$, $S=3/2$, F -wave	(26 ±5) %

NODE=B184220;NODE=B184

DESIG=1

DESIG=2

DESIG=3

DESIG=4

DESIG=5

DESIG=6

DESIG=7

DESIG=8

DESIG=9

DESIG=10

DESIG=11

DESIG=12

 $\Sigma(2230)$ BRANCHING RATIOS

$\Gamma(N\bar{K})/\Gamma_{\text{total}}$	Γ_1/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.06±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184215

NODE=B184R00
 NODE=B184R00

$\Gamma(\Sigma\pi)/\Gamma_{\text{total}}$	Γ_2/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.02±0.01	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R01
 NODE=B184R01

$\Gamma(\Lambda\pi)/\Gamma_{\text{total}}$	Γ_3/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.12±0.06	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R02
 NODE=B184R02

$\Gamma(\Xi K)/\Gamma_{\text{total}}$	Γ_4/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.02±0.01	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R03
 NODE=B184R03

$\Gamma(\Lambda(1520)\pi, S\text{-wave})/\Gamma_{\text{total}}$	Γ_5/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.14±0.05	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R04
 NODE=B184R04

$\Gamma(\Lambda(1520)\pi, D\text{-wave})/\Gamma_{\text{total}}$	Γ_6/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.04±0.04	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R05
 NODE=B184R05

• • • We do not use the following data for averages, fits, limits, etc. • • •

~ 1	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel
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$\Gamma(\Sigma(1385)\pi, P\text{-wave})/\Gamma_{\text{total}}$	Γ_7/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.04±0.04	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R06
 NODE=B184R06

$\Gamma(\Sigma(1385)\pi, F\text{-wave})/\Gamma_{\text{total}}$	Γ_8/Γ		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.03±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

NODE=B184R07
 NODE=B184R07

$\Gamma(\Delta\bar{K}, P\text{-wave})/\Gamma_{\text{total}}$ Γ_9/Γ

VALUE

 0.14 ± 0.05

DOCUMENT ID

SARANTSEV 19

TECN

DPWA

COMMENT

 $\bar{K}N$ multichannelNODE=B184R08
NODE=B184R08 $\Gamma(\Delta\bar{K}, F\text{-wave})/\Gamma_{\text{total}}$ Γ_{10}/Γ

VALUE

 0.08 ± 0.02

DOCUMENT ID

SARANTSEV 19

TECN

DPWA

COMMENT

 $\bar{K}N$ multichannelNODE=B184R09
NODE=B184R09 $\Gamma(N\bar{K}^*(892), S=1/2, F\text{-wave})/\Gamma_{\text{total}}$ Γ_{11}/Γ

VALUE

 0.08 ± 0.03

DOCUMENT ID

SARANTSEV 19

TECN

DPWA

COMMENT

 $\bar{K}N$ multichannelNODE=B184R10
NODE=B184R10 $\Gamma(N\bar{K}^*(892), S=3/2, F\text{-wave})/\Gamma_{\text{total}}$ Γ_{12}/Γ

VALUE

 0.26 ± 0.05

DOCUMENT ID

SARANTSEV 19

TECN

DPWA

COMMENT

 $\bar{K}N$ multichannelNODE=B184R11
NODE=B184R11

 $\Sigma(2230)$ REFERENCES

SARANTSEV 19 EPJ A55 180

A.V. Sarantsev *et al.*

(BONN, PNPI)

NODE=B184

REFID=59986